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Regulatory Directive DIR2014-02

Revisions and Updates to Specific Residue Chemistry Crop Groups

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1.0 Purpose

The purpose of this Regulatory Directive is to communicate to industry and other interested parties revisions to the Pest Management Regulatory Agency's (PMRA) residue chemistry Crop groups 4 and 5, Leafy Vegetables (except Brassica vegetables) and Brassica (Cole) Leafy Vegetables, respectively. These revisions supersede the original crop groups 4 and 5 as listed in Regulatory Directive 98-02, *Residue Chemistry Guidelines*. A new Crop Group 22 Stalk, Stem, and Leaf Petioles has also been established. In addition, an amendment has been made to the Stone Fruit Crop Group 12-09.

2.0 Background

Crop groupings allow maximum residue limits (MRLs) to be established for multiple related crops based on data from a representative set of crops. The crop grouping concept leads to an estimate of the maximum residue level that could occur on any crop within the group. Crop groups enable the registration, expansion and establishment of MRLs for groups of similar crops based on residue data from certain representative commodities. The crop groups listed in Regulatory Directive DIR98-02 were based on revisions made in 1995.

As a result of the 2002 United States Department of Agriculture / Interregional Research Project No. 4 (IR-4) International Crop Grouping Symposium, the International Crop Grouping Consulting Committee (ICGCC) was established to a) update the crop groups to incorporate more than 500 "orphan crops" that were not members of an existing crop group, and b) develop new crop groups to more easily harmonize crop groups and simplify the commodity terminology for establishing MRLs.

In co-operation with the United States Environmental Protection Agency and the ICGCC, the PMRA is revising and updating the 20 crop groups as listed in Section 15 of Regulatory Directive DIR98-02, *Residue Chemistry Guidelines*. The PMRA expects these revisions to promote more extensive use of crop groupings for MRL setting purposes and, in particular, facilitate the availability of pesticides for minor crop uses.

To date, the PMRA has approved revisions to eight of the existing crop groups. Under DIR2009-01, DIR2010-01 and DIR2011-02, the following crop groups were revised:

- • Crop Group 3, Bulb Vegetables Group
- • Crop Group 8, Fruiting Vegetables Group
- • Crop Group 10, Citrus Fruits Group
- • Crop Group 11, Pome Fruits Group
- • Crop Group 12, Stone Fruits Group
- • Crop Group 13, Berry and Small Fruits Group
- • Crop Group 14, Tree Nuts Group
- • Crop Group 20, Oilseeds Group

A new crop group, Crop Group 21, Edible Fungi Group was also created and Calendula, a new oilseed crop was added to Crop Group 20. These revisions expand the existing crop groups by adding new commodities, establishing new crop subgroups and revising the representative crops in some groups.

Ongoing work has resulted in revisions to Crop Group 4 Leafy Vegetables (except Brassica vegetables) and Crop Group 5 Brassica (Cole) Leafy Vegetables, as well as the establishment of a new Crop Group 22 Stalk, Stem, and Leaf Petioles.

3.0 Naming Convention for Revised Crop Groups

In order to create a clear distinction between existing and revised crop groups, a standardized naming format has been adopted for identifying revised crop groups. The revised Crop Groups will retain the same (or similar) name and number as the original crop group, except that the number will be followed by a hyphen and the final two digits of the year it was approved by the PMRA. For example, the original fruiting vegetables crop group is identified as "Crop Group 8: Fruiting Vegetables (Except Cucurbits) Group. The revised crop group is identified as "Crop Group 8-09: Fruiting Vegetables Group" as it was approved in 2009.

4.0 Revised Crop Groups identified in this Regulatory Directive

4.1 Crop Group 4-13 Leafy Vegetables Group

- The original Crop Group 4, Leafy Vegetables (except Brassica Vegetables) has been modified and is renamed as Crop Group 4-13, Leafy Vegetables Group.
- The revised crop group has been expanded from the existing 27 commodities to 63 commodities.
- The representative commodities for the crop group are Head Lettuce, Leaf Lettuce, Spinach and Mustard Greens.
- There are 2 related subgroups associated with this crop group.

4.2 Crop Group 5-13 Brassica Head and Stem Vegetable Group

- The original Crop Group 5, Brassica (Cole) Leafy Vegetables Group has been modified and is renamed as Crop Group 5-13, Brassica Head and Stem Vegetable Group.
- The revised crop group has been reduced from the original 17 commodities to five commodities. Many of the crops in the original crop group were moved to the revised Crop Group 4-13.
- The representative commodities for the crop group are Broccoli or Cauliflower, and Cabbage.
- There are no subgroups associated with this crop group.

4.3 Crop Group 22 Stalk, Stem, and Leaf Petioles

- This is a newly established crop group that is named Stalk, Stem, and Leaf Petioles.
- There are 20 commodities within this crop group.
- The representative commodities are Asparagus and Celery.
- There are two subgroups associated with this group.

Appendix I contains a listing of the original crop groups 4 and 5 as per DIR98-02 as well as the revised crop groups 4-13 and 5-13 and the newly established Crop Group 22.

4.4 Amendments to Crop Group 12-09 Stone Fruit Group

The revised Stone Fruit Crop Group 12-09 was established via Regulatory Directive DIR2010-01, which was published on 8 January 2010. This revision added an additional 11 commodities to the Stone Fruit Crop Group, including chokecherries. However, chokecherries were also previously included in the revised Berry and Small Fruit Crop Group (13-07). As a general rule, the Agency will avoid having a commodity as a member of more than one crop group. The size of the chokecherry fruit is closer to elderberry and mulberry (the representative crops of Crop Subgroup 13-07C) than to sweet or tart cherry (the representative crops of Crop Subgroup 12-09A). Therefore, chokecherries have been retained in the previously established Crop Group 13-07 and removed from the Stone Fruit Crop Group 12-09.

In addition, the Agency has included the commodity Chinese jujube in the Stone Fruit Crop Group 12-09. The growth and cultural practices of Chinese jujube is similar to some stone fruits such as cherries and small varieties of plums and should, therefore, be similar to other stone fruits in terms of pesticide residue exposure. Therefore, Chinese jujube has been included as a member of Crop Group 12-09 and as a member of the Plum Subgroup 12-09C.

These revisions to the Stone Fruit Crop Group 12-09 are consistent with the revisions made by the United States Environmental Protection Agency for this Crop Group.

Appendix I Table of Original Crop Groups as per DIR98-02 and Revised Crop Groups 4-13, 5-13, and the newly established Crop Group 22

Original Crop Group as per Dir98-02	Revised/New Crop Group
4 – Leafy Vegetables (except Brassica) Group **Representative Commodities:** Celery, Head Lettuce, Leaf Lettuce, and Spinach	**4-13 – Leafy Vegetables Crop Group** **Representative Commodities:** Head Lettuce, Leaf Lettuce, Spinach, and Mustard Greens
Crop Subgroup 4A: Leafy Greens Subgroup **Representative commodities:** Head Lettuce, Leaf Lettuce, and Spinach.	**Crop Subgroup 4-13A: Leafy Greens Subgroup** **Representative commodities:** Head Lettuce, Leaf Lettuce, and Spinach.
Amaranth (leafy amaranth, Chinese spinach, tampala) (*Amaranthus* spp.) Arugula (Roquette) (*Eruca sativa*) Chervil (*Anthriscus cerefolium*) Chrysanthemum, edible-leaved (*Chrysanthemum coronarium* var. *coronarium*) Chrysanthemum, garland (*Chrysanthemum coronarium* var. *spatiosum*) Corn salad (*Valerianella locusta*) Cress, garden (*Lepidium sativum*) Cress, upland (yellow rocket, winter cress) (*Barbarea vulgaris*) Dandelion (*Taraxacum officinale*) Dock (sorrel) (*Rumex* spp.) Endive (escarole) (*Cichorium endivia*) Lettuce, head and leaf (*Lactuca sativa*) Orach (*Atriplex hortensis*) Parsley (*Petroselinum crispum*) Purslane, garden (*Portulaca oleracea*) Purslane, winter (*Montia perfoliata*) Radicchio (red chicory) (*Cichorium intybus*) Spinach (*Spinacia oleracea*) Spinach, New Zealand (*Tetragonia tetragonioides*, T. *expansa*) Spinach, vine (Malabar spinach, Indian spinach) (*Basella alba*)	Amaranth, Chinese (*Amaranthus tricolor*) Amaranth, leafy (*Amaranthus* spp.) Aster, Indian (*Kalimeris indica*) Blackjack (*Bidens pilosa*) Cat's Whiskers (*Cleome gynandra*) Cham-chwi (*Doellingeria scabra*) Cham-na-mul (*Pimpinella calycina*) Chervil, fresh leaves (*Anthriscus cerefolium*) Chipilin (*Crotalaria longirostrata*) Chrysanthemum, garland (*Glebionis coronaria*) Cilantro, fresh leaves (*Coriandrum sativum*) Corn salad (*Valerianella* spp.; including Lamb's lettuce, *Valerianella locusta* and Italian Corn salad, *Valerianella eriocarpa*) Cosmos (*Cosmos caudatus*) Dandelion (*Taraxacum officinale*) Dang-gwi (*Angelica gigas*) Dillweed, fresh leaves (*Anethum graveolens*) Dock (*Rumex patientia*) Dol-nam-mul (*Sedum sarmentosum*) Ebolo (*Crassocephalum crepidioides*) Endive (*Cichorium endivia* ssp. *endivia*) Escarole (*Cichorium endivia* ssp. *endivia*) Fameflower (*Talinum fruticosum*) Feather cockscomb (*Glinus oppositifolius*) Good King Henry (*Chenopodium bonus-henricus*) Huauzontle (*Chenopodium berlandieri*) Jute leaves (*Corchorus spp.*) Lettuce, bitter (*Launaea cornuta*) Lettuce, head (*Lactuca sativa*; including *Lactuca sativa* var. *capitata*) Lettuce, leaf (Romaine) (*Lactuca sativa*; including *Lactuca sativa* var. *longifolia*; *Lactuca sativa* var. *crispa*) Orach (*Atriplex hortensis*) Parsley, fresh leaves (*Petroselinum crispum*; *Petroselinum crispum* var. *neapolitanum*) Plantain, buckhorn (*Plantago* spp.; including Buckhorn plantain, *Plantago lanceolata* and Common plantain, *P. major*) Primrose, English (*Primula vulgaris*) Purslane, garden (*Portulaca oleracea*) Purslane, winter (*Claytonia perfoliata*) Radicchio (Red Chicory) (*Cichorium intybus*) Spinach (*Spinacia oleracea*) Spinach, Malabar (*Basella alba*)

Original Crop Group as per Dir98-02	Revised/New Crop Group
	Spinach, New Zealand (*Tetragonia tetragonioides*) Spinach, tree (Giant Lambsquarter) (*Chenopodium giganteum*) Swiss chard (*Beta vulgaris* subsp. *vulgaris*) Tanier spinach (*Xanthosoma brasiliense*) Violet, Chinese (*Asystasia gangetica*) Cultivars, varieties, and hybrids of these commodities.
Crop Subgroup 4B: Leafy Petioles Subgroup **Representative commodities:** Celery	**Crop Subgroup 4-13B: Brassica Leafy Greens Subgroup** **Representative commodity:** Mustard Greens
Cardoon (*Cynara cardunculus*) Celery (*Apium graveolens* var. *secalinum*) Celery, Chinese (*Apium graveolens* var. *secalinum*) Celtuce (*Lactuca sativa* var. *angustana*) Fennel, Florence (finochio) (*Foeniculum vulgare* var. *azoricum*) Rhubarb (*Rheum rhabarbarum*) Swiss chard (*Beta vulgaris* var. *cicla*)	Arugula (*Eruca sativa*) Broccoli raab (*Brassica ruvo*) Broccoli, Chinese (*Brassica oleracea* var. *alboglabra*) Cabbage, Abyssinian (*Brassica carinata*) Cabbage, seakale (*Brassica oleracea* L. var. *costata*) Chinese cabbage, bok choy (*Brassica rapa* subsp. *chinensis*) Collards (*Brassica oleracea* var. *viridis*) Cress, garden (*Lepidium sativum*) Cress, upland (*Barbarea vulgaris*) Hanover salad (*Brassica napus* var. *pabularia*) Kale (*Brassica oleracea* var. *sabellica*) Maca (*Lepidium meyenii*) Mizuna (*Brassica rapa* L. subsp. *nipposinica*) Mustard greens (*Brassica juncea* subspp.; including *Brassica juncea* subsp. *Integrifolia* and *Brassica juncea* subsp. *tsatsai*) Radish, leaves (*Raphanus sativus* L. var *sativus;* including *Raphanus sativus* var. *mougri*, *Raphanus sativus* L. var. *oleiformis*) Rape greens (*Brassica napus* var. *napus* including *Brassica rapa* subsp. *trilocularis*; *Brassica rapa* subsp. *dichotoma*, *Brassica rapa* subsp. *oleifera*) Rocket, wild (*Diplotaxis tenuifolia*) Shepherd's purse (*Capsella bursa-pastoris*) Turnip greens (*Brassica rapa* L. subsp. *rapa*) Watercress (*Nasturtium officinale*) Cultivars, varieties, and hybrids of these commodities.

Original Crop Group as per Dir98-02	Revised Crop Group
5 – Brassica (Cole) Leafy Vegetables Group **Representative Commodities:** Broccoli or Cauliflower, Cabbage and Mustard Greens	**5-13 – *Brassica* Head and Stem Vegetables Group** **Representative Commodities:** Broccoli or Cauliflower, and Cabbage
Crop Subgroup 5A: Head and Stem Brassica Subgroup **Representative commodities:** Broccoli or Cauliflower, and Cabbage	Broccoli (*Brassica oleracea* var. *italica*) Brussels sprouts (*Brassica oleracea* var. *gemmifera*) Cabbage (*Brassica oleracea* var. *capitata*) Cabbage, Chinese, napa (*Brassica rapa* subsp. *pekinensis*) Cauliflower (*Brassica oleracea* var. *capitata*) Cultivars, hybrids, and varieties of these commodities. **NOTE:** There are no subgroups in the revised Crop Group 5-13.
Broccoli (*Brassica oleracea* var. *botrytis*) Broccoli, Chinese (gai lon) (*Brassica alboglabra*) Brussels sprouts (*Brassica oleracea* var. *gemmifera*) Cabbage (*Brassica oleracea*) Cabbage, Chinese (napa) (*Brassica pekinensis*) Cabbage, Chinese, mustard (gai choy) (*Brassica campestris*) Cauliflower (*Brassica oleracea* var. *botrytis*) Cavolo broccolo (*Brassica oleracea* var. *botrytis*) Kohlrabi (*Brassica oleracea* var. *gongylodes*)	
Crop Subgroup 5B: Leafy Brassica Greens Subgroup. **Representative commodity:** Mustard Greens	
Broccoli raab (rapini) (*Brassica campestris*) Cabbage, Chinese (bok choy) (*Brassica chinensis*) Collards (*Brassica oleracea* var. *acephala*) Kale (*Brassica oleracea* var. *acephala*) Mizuna (*Brassica rapa japonica* group) Mustard greens (*Brassica juncea*) Mustard spinach (*Brassica rapa perviridis* group) Rape greens (*Brassica napus*)	

Original Crop Group as per Dir98-02	Revised Crop Group
	22 – Stalk, Stem and Leaf Petioles Group **Representative Commodities:** Celery and Asparagus
There is currently no "Stalk, Stem and Leaf Petioles" Crop Group.	**Crop Subgroup 22A: Stalk and Stem Vegetables Subgroup** **Representative commodity:** Asparagus
	Agave (*Agave* spp.) Aloe vera, (*Aloe vera* (L.) Burm.f.) Asparagus (*Asparagus officinalis*) Bamboo shoots (*Arundinaria* spp.; *Bambusa* spp.;*Chimonobambusa* spp.; *Dendrocalamus* spp.; *Gigantochloa* spp.; *Nastus elantus*; *Phyllostachys* spp.; *Thyrsostachys siamensis*; *Thyrsostachys oliverii)* Celtuce (*Lactuca sativa* var. *angustana*) Fennel, Florence, fresh leaves and stalk (*Foeniculum vulgare* subsp. *vulgare* var. *azoricum*) Fern, edible (Fiddlehead including: Black lady fern, *Deparia japonica*; Bracken fern, *Pteridium aquilinum*; Broad buckler fern, *Dryopteris dilatata*; Cinnamon fern, *Osmundastrum cinnamomeum*; Lady fern, *Athyrium filix-femina*; Leather fern, *Acrostichum aureum*; Mother fern, *Diplazium proliferum*; Ostrich fern, *Matteuccia struthiopteris*; Vegetable fern, *Diplazium esculentum*; Zenmai fern, *Osmunda japonica*) Kale, sea (*Crambe maritima*) Kohlrabi (*Brassica oleracea* var *gongylodes*) Palm hearts (including: Peach Palm, *Bactris gasipaes*; Palmyra palm, *Borassus flabellifera*; African fan palm, *Borassus aethiopum*; Coconut, *Cocos nucifera*; Cabbage palm, *Euterpe oleracea*; Wine palm, *Raphia* spp.; Royal palm, *Roystonea oleracea*; Salak palm, *Salacca zalacca* Voss; Saw palmetto, *Serenoa repens*; Cabbage palmetto, *Sabal palmetto*) Prickly pear, (*Opuntia ficus-indica* (L.)) Prickly pear, Texas, (*Opuntia engelmannii)* Cultivars, varieties, and hybrids of these commodities.
	Crop Subgroup 22B: Leaf Petiole Vegetables Subgroup **Representative commodity:** Celery
	Cardoon (*Cynara cardunculus*) Celery (*Apium graveolens* var. *dulce*) Celery, Chinese (*Apium graveolens* var. *secalinum*) Fuki (*Petasites japonicus*) Rhubarb (*Rheum x hybridum*) Udo (*Aralia cordata*) Zuiki (*Colocasia gigantea*) Cultivars, varieties, and hybrids of these commodities.